

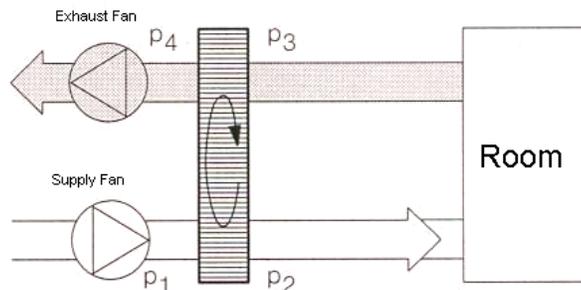
**Michigan Department of Community Health
Health Facilities Evaluation Section**

Interpretive Bulletin: #01-2004	
Subject	Rule Reference
Energy Recovery Devices in HVAC Systems (Heat/Desiccant Wheels, Plate Exchangers)	Minimum Design Standards for Health Care Facilities in Michigan, Sections 7.31.D2, 8.31.D2, A7.31.D2
	Date February 3, 2004

Interpretive Bulletins are released by the Health Facility Evaluation Section to clarify sections of the Michigan Design Standards for Health Care Facilities in Michigan and when research, experience, or technology illustrates present regulations do not adequately address the specific instances or circumstances in the health care environment.

Designers often propose energy recovery devices such as, heat wheels, desiccant wheels, plate heat exchanger (including honeycomb, Z-plates, etc.), and other devices as a means to pre-treat incoming air of a HVAC system. Energy recovery devices can be an effective means of reducing energy costs in a healthcare setting. However, these devices must be properly designed, installed and maintained to ensure separation between the incoming and exhaust air streams and prevent reintroduction of potentially contaminated air into the fresh air supply. Where energy recovery devices are used, the following design elements apply.

1. The supply and exhaust air fans must properly sized and placed to prevent introduction of contaminants from the exhaust air stream from entering the HVAC system. In the event of a device failure, air must always flow from clean to less clean. Typically, the supply air fan must be located upstream (blow-through) of the energy recovery device and, the exhaust fan must be located downstream (draw-through) of the energy recovery device. For energy recovery wheels, the static pressure of the supply air stream on each side to the wheel must always be greater than the exhaust air stream to control leakage. (See figure 1)
2. Final air filters must be located downstream of an energy recovery device.
3. Energy recovery devices are not to be used in contaminated exhaust air streams such as airborne infection isolation rooms, pharmacy cytotoxic hoods, laboratory hoods, and other similar exhausts that may contain toxic fumes.



Where $P_1 > P_4$ and $P_2 > P_3$

Figure 1